

### REMARKS

In the Office Action dated October 19, 2005, the Examiner rejects claims 1-20 under 35 U.S.C. § 103(a). With this Amendment, no claims are amended, added or canceled. After entry of this Amendment, claims 1-20 remain pending in the Application. Reconsideration of the Examiner's rejections is respectfully requested.

With this Amendment, two minor corrections are made to the specification. In paragraph [0017], the adjective variable has been removed so that it no longer modifies the voltage V. As is clear from earlier in the paragraph, the voltage V can be variable or fixed. In paragraph [0021], a grammatical error has been corrected. It is respectfully submitted that these changes merely clarify the subject paragraphs and that they do not constitute new matter. Applicants respectfully request entry of the changes to the specification.

The Examiner rejects claims 1-3, 6-8, 12-14 and 17-19 under 35 U.S.C. § 103(a) as being unpatentable over Goodman (US 6,088,210) in view of Kesselring et al. (US 2,838,634) and Gotisar et al. (US 5,049,786). The Examiner states that Goodman teaches a diode as claimed in each of independent claims 1 and 12. The Examiner acknowledges that Goodman does not teach a spark gap as recited in these claims, but states that Goodman teaches a solid-state device including a trigger circuit and teaches the prior art use of a spark gap surge arrester used for magnet protection. The Examiner relies upon Kesselring et al. for its teaching of a spark gap 40 in series with a diode 42 and resistance 43. The Examiner further states that Goodman discloses a housing, but fails to disclose a housing enclosing a spark gap, filled with inert gas. The Examiner relies upon Gotisar et al. for the teaching of a spark gap tube 10 wherein the interior 28 of the housing 26 is a controlled environment of an inert gas. The Examiner states that it would have been obvious at the time the invention was made to one skilled in the art modify Goodman's apparatus with a spark gap as taught by Kesselring et al. and a housing enclosing inert gas as taught by Gotisar et al. as both are related to the protection of inductive devices from the effects of destructive voltage in case of an open

circuit with spark gap known to have no leakage current and inert gas known to protect the spark gap from moisture and corrosion.

These rejections are respectfully traversed. It is initially submitted that the Examiner's reliance on the non-analogous art of Kesselring et al. and Gotisar et al. is inappropriate. In particular, one skilled in the art of protective devices for inductive loads would not search or have knowledge of art related to electrothermally actuated switches for limiting excess currents (Kesselring et al.) and related to high energy ignition systems incorporating periodic switches (Gotisar et al.). For resolution of obviousness under 35 U.S.C. §103, the law presumes full knowledge by the hypothetical worker having ordinary skill in the art of all the prior art in the inventors' field of endeavor. With respect to the present application, the appropriate field of endeavor is the electrical arts related to circuit protection of electromagnetic devices. With regard to prior art outside the inventors' field of endeavor, knowledge is presumed only as to those arts reasonably pertinent to the particular problem with which the inventor was involved. See *In re Clay*, 966 F.2d 656, 23 U.S.P.Q. 2d 1058 (Fed. Cir. 1992); *In re Wood*, 599 F.2d 1032, 202 U.S.P.Q. 171 (CCPA 1979); *In re Antle*, 444 F.2d 1168, 170 U.S.P.Q. 285 (CCPA 1971). Following *Clay* and *Wood*, the determination that a reference is from a non-analogous art is two-fold. First, it must be decided if the reference is from within the inventors' field of endeavor. If it is not, then it must be determined whether the reference is reasonably pertinent to the particular problem involved. Kesselring et al. discloses a method for limiting excess currents by interrupting a circuit under short circuit in the class 337/154. Gotisar et al. discloses a spark rate ignitor system for use in high energy ignition systems comprising a switch using capacitive discharge in the class 315/209 CD. Neither reference relates to the art of protection systems for electromagnetic devices in, in the case of Goodman, class 361/160, and is outside of the inventors' field of endeavor. In addition, although the Examiner argues that both the references are related to the protection of inductive devices from the effects of destructive voltages in the case of an open circuit, this characterization is incorrect. In

fact, neither reference is reasonably pertinent to the particular problem involved in the present application. The present application is concerned with the protection of an inductive device upon the occurrence of an open circuit, while Kesselring et al. is concerned with protection for loads (not necessarily inductive) against excess currents caused by short circuits, and Gotisar et al. is concerned with normal conditions where a spark gap is periodically fired through a controlled voltage discharge. It is respectfully submitted that Kesselring et al. and Gotisar et al. are non-analogous art, and therefore cannot be properly combined with Goodman as suggested by the Examiner in rejecting the claims. Reconsideration and withdrawal of the Examiner's rejection is respectfully requested.

In addition, it is respectfully submitted that even if these references are considered to be analogous art, the combination of references taken singularly or in any permissible combination does not anticipate, teach or suggest the present invention as set forth in the claims. The invention of Goodman is a magnet protector 10 comprising a solid-state trigger circuit T and a bilateral power semiconductor circuit S. (Goodman, col. 2, ll. 31-44). The solid-state design is designed to overcome the problems of the prior art. Specifically, Goodman replaces the traditional spark gap surge arrester, which it characterizes as a crude device with which one cannot easily determine or control the arc voltage. (Goodman, col. 2, ll. 13-20). The controllability of the magnet terminal voltage by the solid-state design is an important feature as, unlike prior art devices, this feature limits the power developed while the magnet is discharging. (Goodman, col. 2, line 66 – col. 3, line 8). Also important for the invention, the magnet protector 10 is bilateral. (Goodman, col. 3, ll. 27-30). The Examiner's suggestion of incorporating a spark gap 40, 46 of Kesselring et al. is completely contrary to the teachings of Goodman that spark gaps are not satisfactory protectors for electromagnets. This suggestion eviscerates the entire purpose of the invention of Goodman, i.e., to eliminate the use of a spark gap in the protection of an electromagnet. (Goodman, claims 1, 5 and 13). Moreover, it is important to note that claims 1 and 12 specify that the diode is in series

with the spark gap. In Goodman, the diodes are part of the trigger circuit T needed to trigger the SCRs of the bilateral power semiconductor circuit S. (Goodman, Fig. 3). If a spark gap as taught by Kesselring et al. were incorporated into Goodman, there is no teaching or suggestion that a diode would be connected in any manner to the spark gap of the modified apparatus. For the foregoing reasons, there is no motivation to incorporate a spark gap according to Kesselring et al. into Goodman.

The third reference cited by the Examiner, Gotisar et al., similarly criticizes spark gaps. More specifically, Gotisar et al. describes the periodic firing of surface gap spark plugs for fuel ignition uses a stored discharge voltage on a capacitor. (Gotisar et al., col. 1, ll. 15-25, 32-41). With respect to a spark gap, Gotisar et al. states that it limits the typical high energy ignitor system in that the breakdown voltage varies with pressure, temperature and time, and the spark gap fixes the discharge energy of the capacitor and prevents variations to respond to changing uses or conditions. (Gotisar et al., col. 1, line 49 – col. 2, line 14). As part of the invention, Gotisar et al. incorporates significant circuitry to minimize these difficulties with a spark gap. (Fig. 5). As with Kesselring et al., there is no teaching or suggestion that a diode of Goodman would be connected in any manner in the proposed combination. One skilled in the art would not be motivated to include any part of the spark gap tube 20 in Gotisar et al. in combination with Goodman and Kesselring et al.

Further, the Examiner's purported motivation for incorporating the teaching of Gotisar et al. of an enclosed spark gap tube 20 is motivated by hindsight. The Examiner states that a housing filled with inert gas surrounding the spark gap is known to protect the spark gap from moisture and corrosion. However, it is respectfully submitted that this benefit is known from the Applicants' specification and not from any teaching in the cited prior art. The Examiner has failed to make a *prima facie* case of obviousness because any motivation to combine references must come from the references, not from the Applicants. At best, the prior art references show components in bits and pieces of the inventive arrangement as claimed in the independent claims.

The relevant art recognizes many components and concepts within its domain. Upon close investigation and scrutiny of the diverse practices in this art and its peripheral technical fields of endeavor, a fact-finder is inevitably led to the conclusion that artisans can and could produce a myriad of devices and functions of apparently endless diversity from components and concepts already individually recognized as belonging to the prior art. Such speculation must not cloud the standards for the evaluation of patentability over the prior art under 35 U.S.C. § 103(a). Properly focused, the issues center on what would have been anticipated, or obvious to one of ordinary skill in the art at the time of the invention. Obviousness is tested by what the combined teaching of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 425, 208 U.S.P.Q. 871, 881 (CCPA 1981). But it cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. See *ACS Hosp. Sys. Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). And teachings of references can be combined only if there is some suggestion or incentive to do so. See *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1599 (Fed. Cir. 1988). Approaches to obviousness determinations which focus merely on identifying and tabulating missing elements in hindsight retrospect imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, and, fall victim to the insidious effect of hindsight syndrome wherein that which only the inventor taught is used against its teacher. *W. L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 U.S.P.Q. 312-3 (Fed. Cir. 1983). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 5 U.S.P.Q. 2d at 1600.

It is respectfully submitted that claims 1 and 12 and their dependent claims are allowable over the prior art of record.

The Examiner rejects claims 4, 5, 9-11, 15, 16 and 20 under 35 U.S.C. §

103(a) as being unpatentable over Goodman in view of Kesselring et al. and further in view of Czerlinski (US 4,520,249). The Examiner acknowledges that the combination of Goodman and Kesselring et al. does not disclose a charge valve, a purge valve or an air pressure gauge for the spark gap housing as recited in these claims. She states, however, that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the housing of Goodman with the teaching of Czerlinski of a spark gap housing 10 with a charge valve 51, a purge valve 55 and an air pressure gauge 31 to maintain a controlled environment of inert gas in the housing to protect the apparatus from moisture and corrosion.

This rejection is also traversed. Czerlinski is non-analogous art that one of ordinary skill in the art of protection of inductive devices from open circuits would not be aware. Czerlinski is directed to selectively producing defined temperature rises in highly localized areas in the art of electrical heating devices, particularly heat exchangers, in class 219/634. (Czerlinski, Abstract). Like Gotisar et al., the spark gap switch 10 of Czerlinski is part of the normal switching circuitry of the inventive device that forms a short or low-conductance path between the connectors 11, 12 to discharge energy from the capacitor 20 through the inductance coil 14. (Czerlinski, col. 2, ll. 47-53). Czerlinski is thus not concerned with the same problems as the Applicants' invention. Since Czerlinski is non-analogous art and is not reasonably related to the protection of an inductive device, it is not prior art and cannot be used in a rejection of the pending claims.

In addition to the foregoing, it is respectfully submitted that even if Czerlinski were prior art to the present invention, no permissible combination of the references would teach the claimed invention. As discussed previously, the combination of Goodman with Kesselring et al., even if Kesselring et al. is analogous art to the present invention, fails to teach or suggest all the features of the independent claim 1, from which claims 4, 5 and 9-11 depend, and claim 12, from which claims 15, 16 and 20 depend. The addition of Czerlinski fails to cure the deficiencies in the proposed

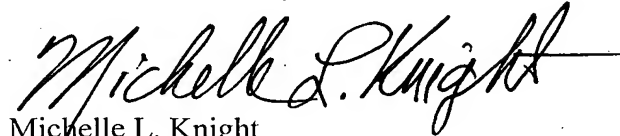
combination. It is respectfully submitted that claims 4, 5, 9-11, 15, 16 and 20 are allowable over the prior art of record.

It is respectfully submitted that this Amendment traverses and overcomes all of the Examiner's objections and rejections to the application as originally filed. It is further submitted that this Amendment has antecedent basis in the application as originally filed, including the specification, claims and drawings, and that this Amendment does not add any new subject matter to the application. Reconsideration of the application as amended is requested. It is respectfully submitted that this Amendment places the application in suitable condition for allowance; notice of which is requested.

If the Examiner feels that prosecution of the present application can be expedited by way of an Examiner's amendment, the Examiner is invited to contact the Applicants' attorney at the telephone number listed below.

Respectfully submitted,

YOUNG & BASILE, P.C.

A handwritten signature in black ink, reading "Michelle L. Knight". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

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